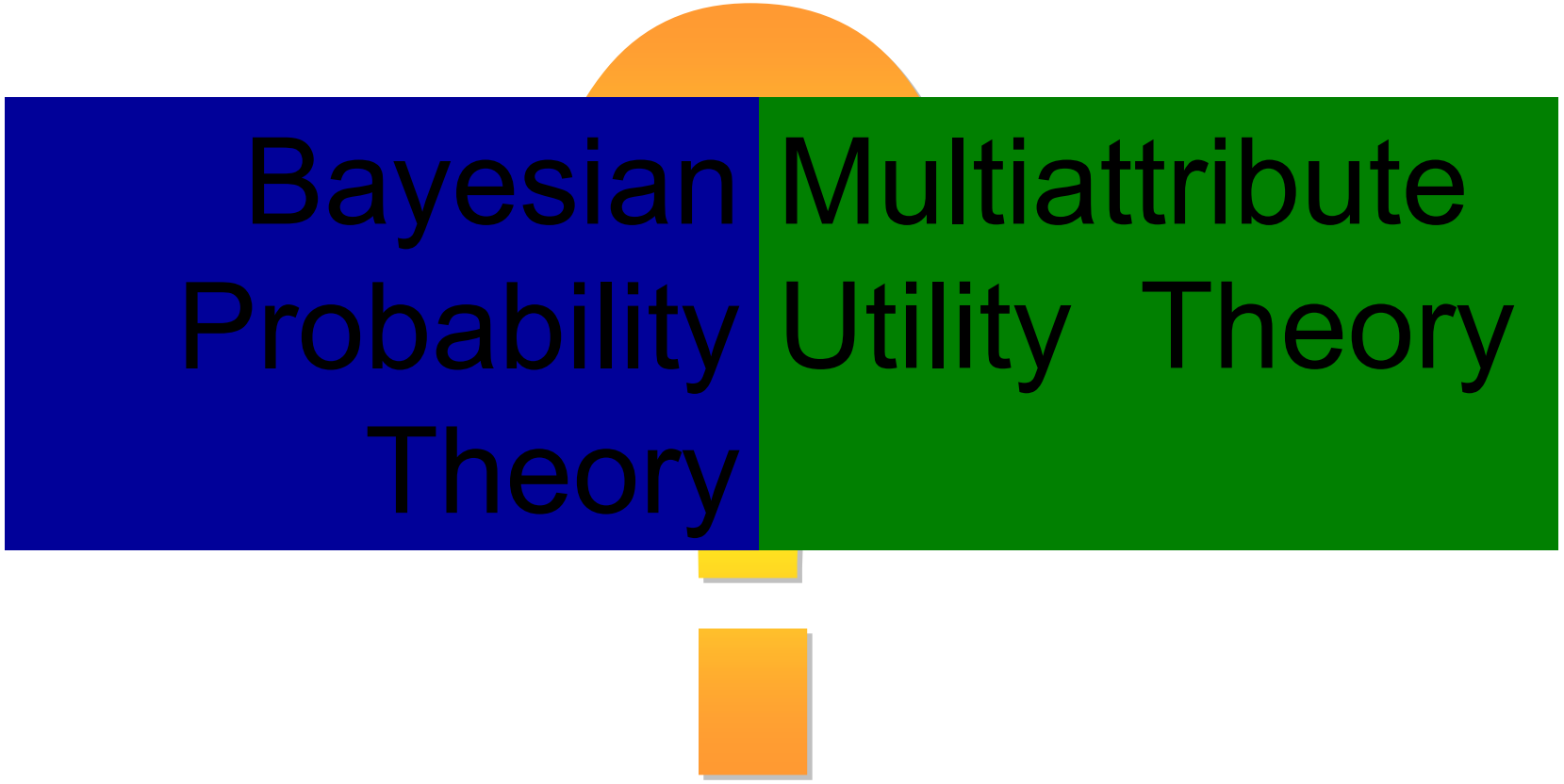
Sources of Power

Improving Clinical Decision-Making Skills

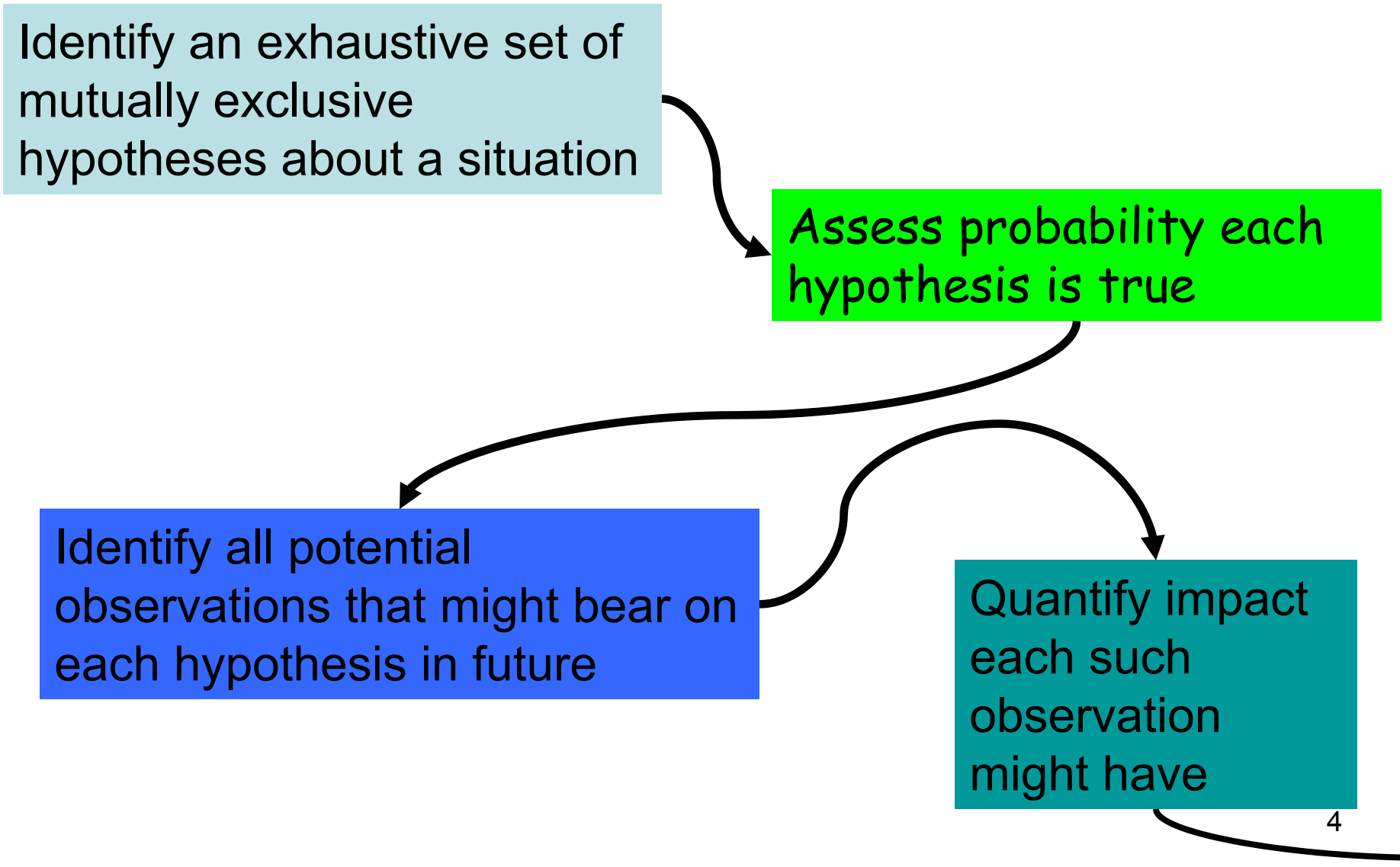
Sources of Power

- At the end of this presentation, you will be able to:
  - Describe classical approaches to decision-making.
  - Discuss limitations on classical decision-making created by natural decision-making environments.
  - Contrast the recognition-primed model of decision-making with classical approaches.
  - Describe the STEP process for applying recognition-primed decision-making.
  - Use the STEP process to analyze complex cases in the out-of-hospital practice of medicine.

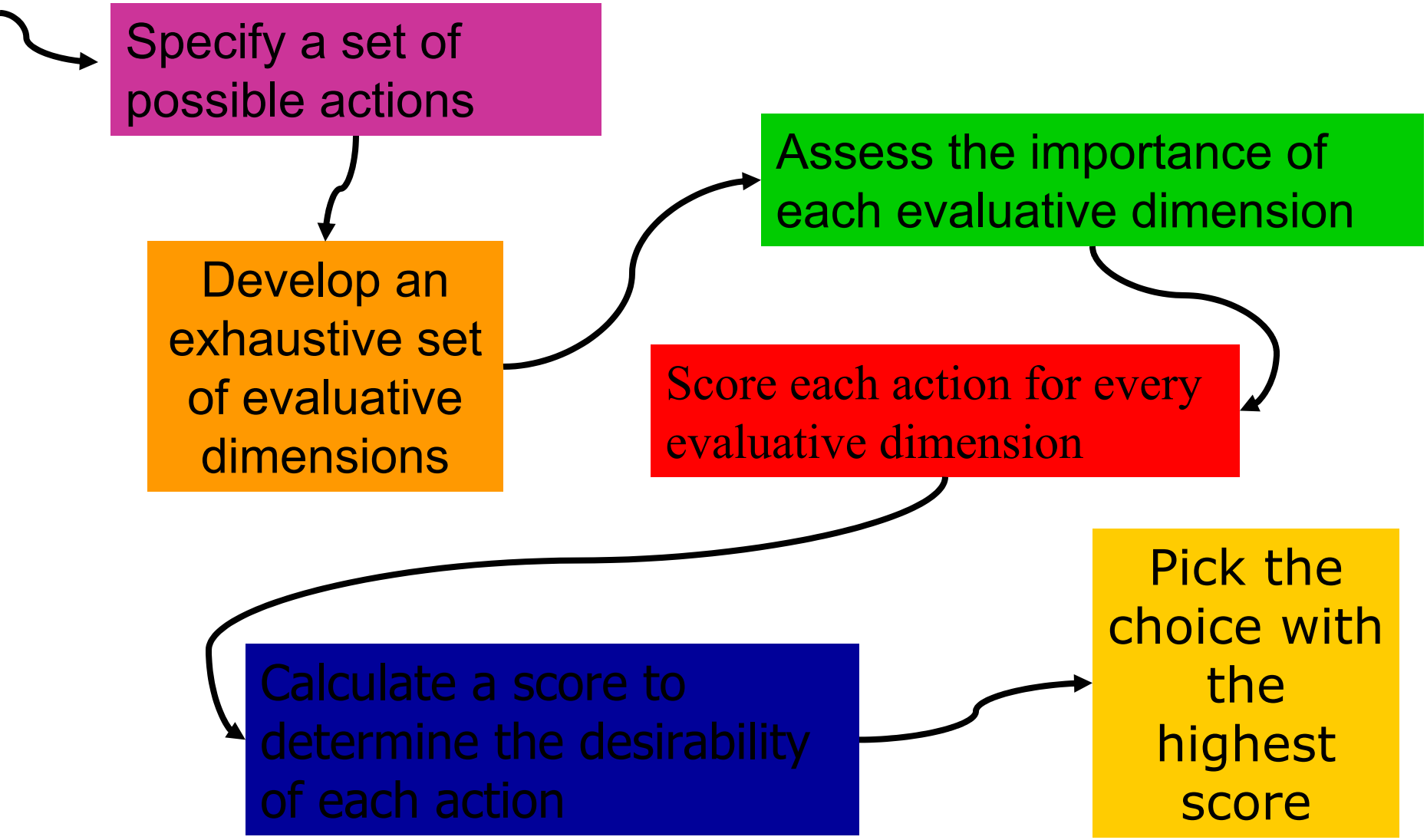
Classical Decision Theory



Bayesian Probability Theory



Multiattribute Utility Theory



It takes a lot of time!

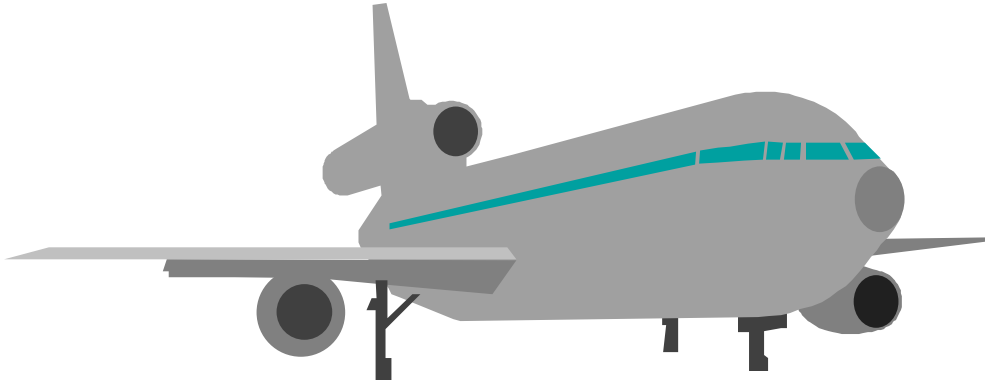
It requires detailed, precise information about the problem!

Does Anyone Use Cost-Benefit Decision

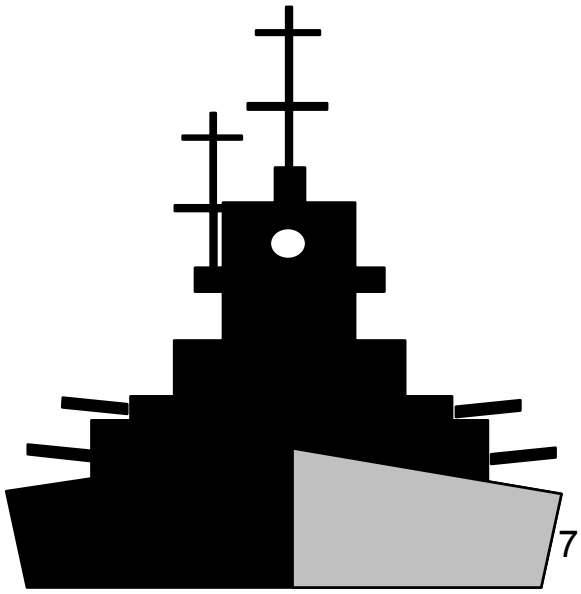
PROBABLY NOT!

It assumes we can quantify all the probabilities!

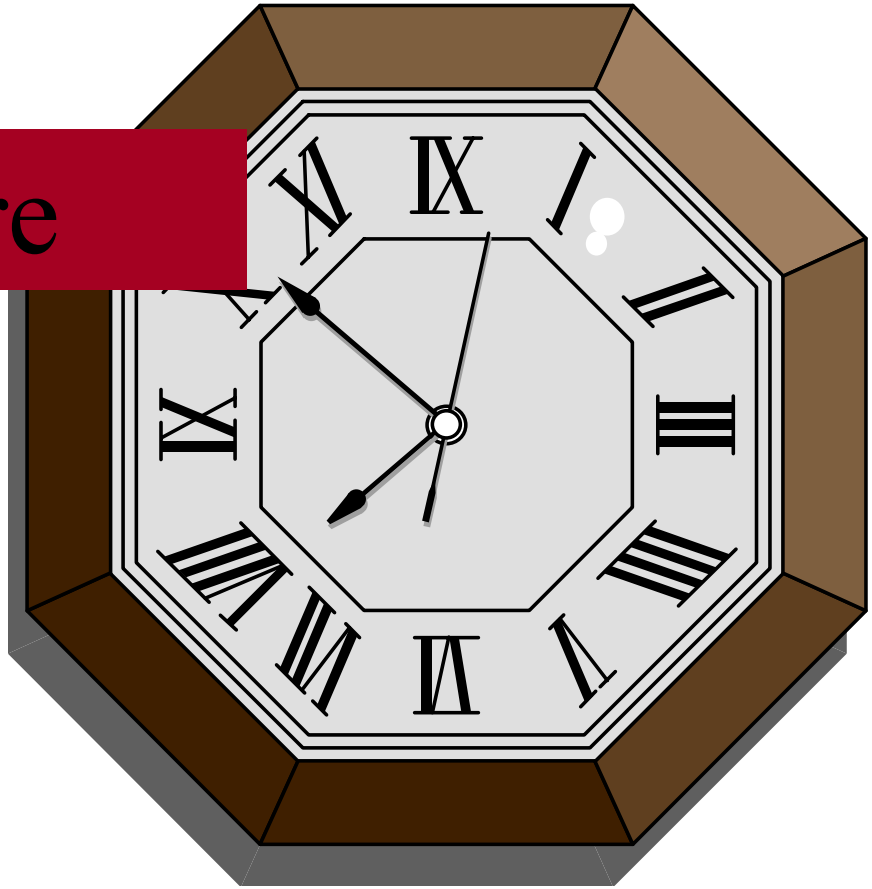
It assumes the situation won't change over time!



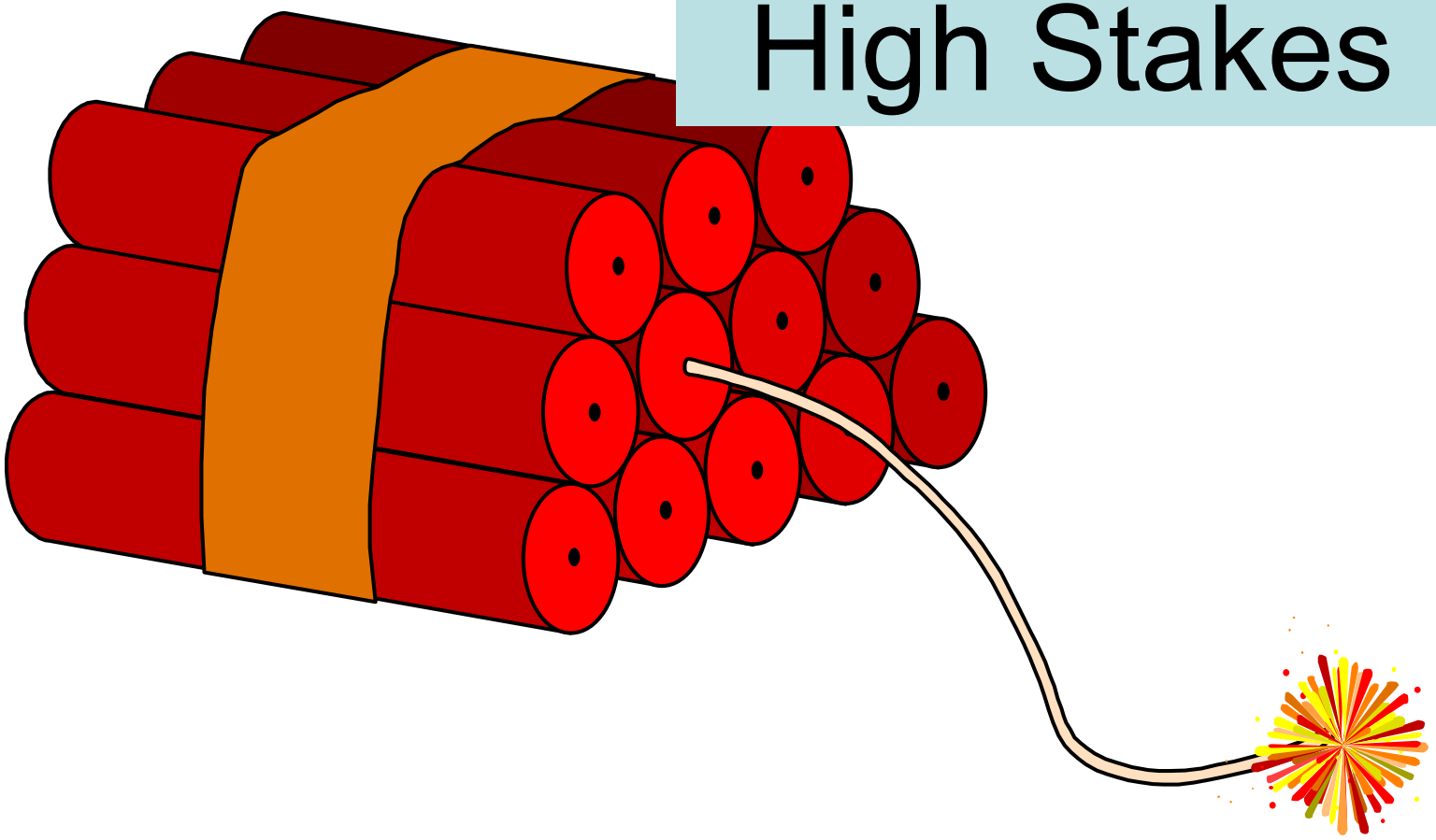
Natural Decision-Making Settings



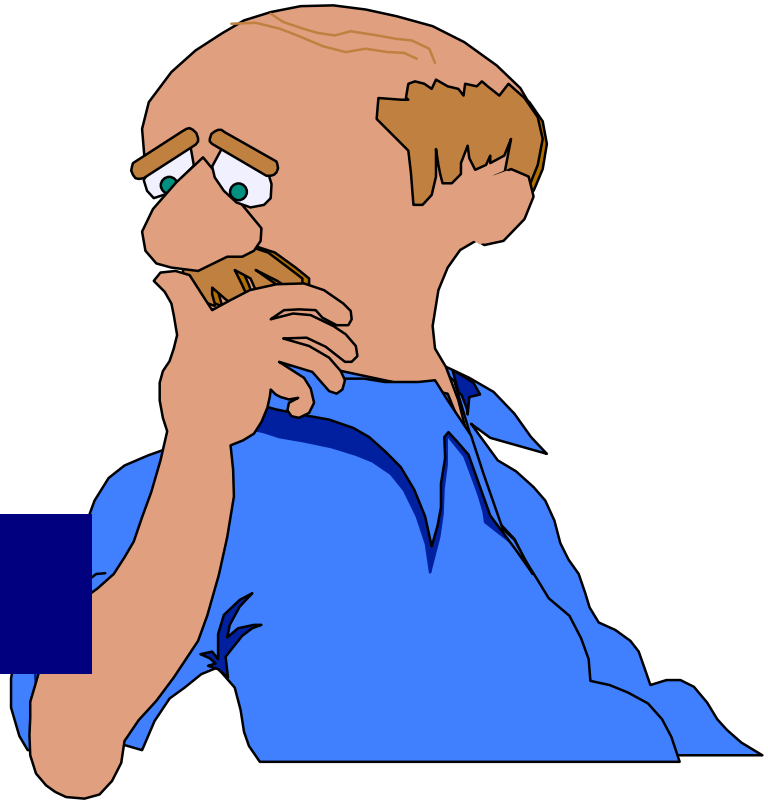
Time Pressure

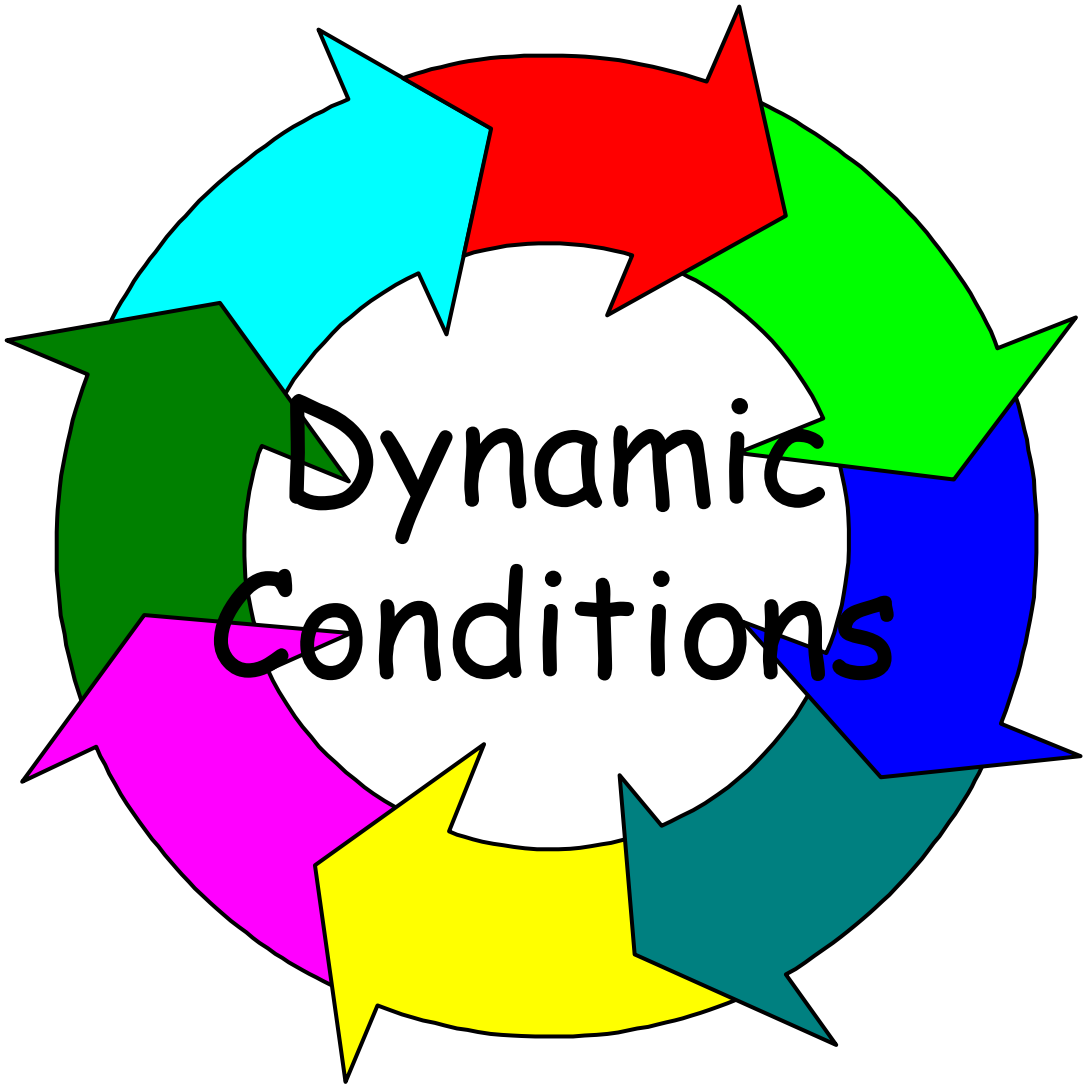


High Stakes

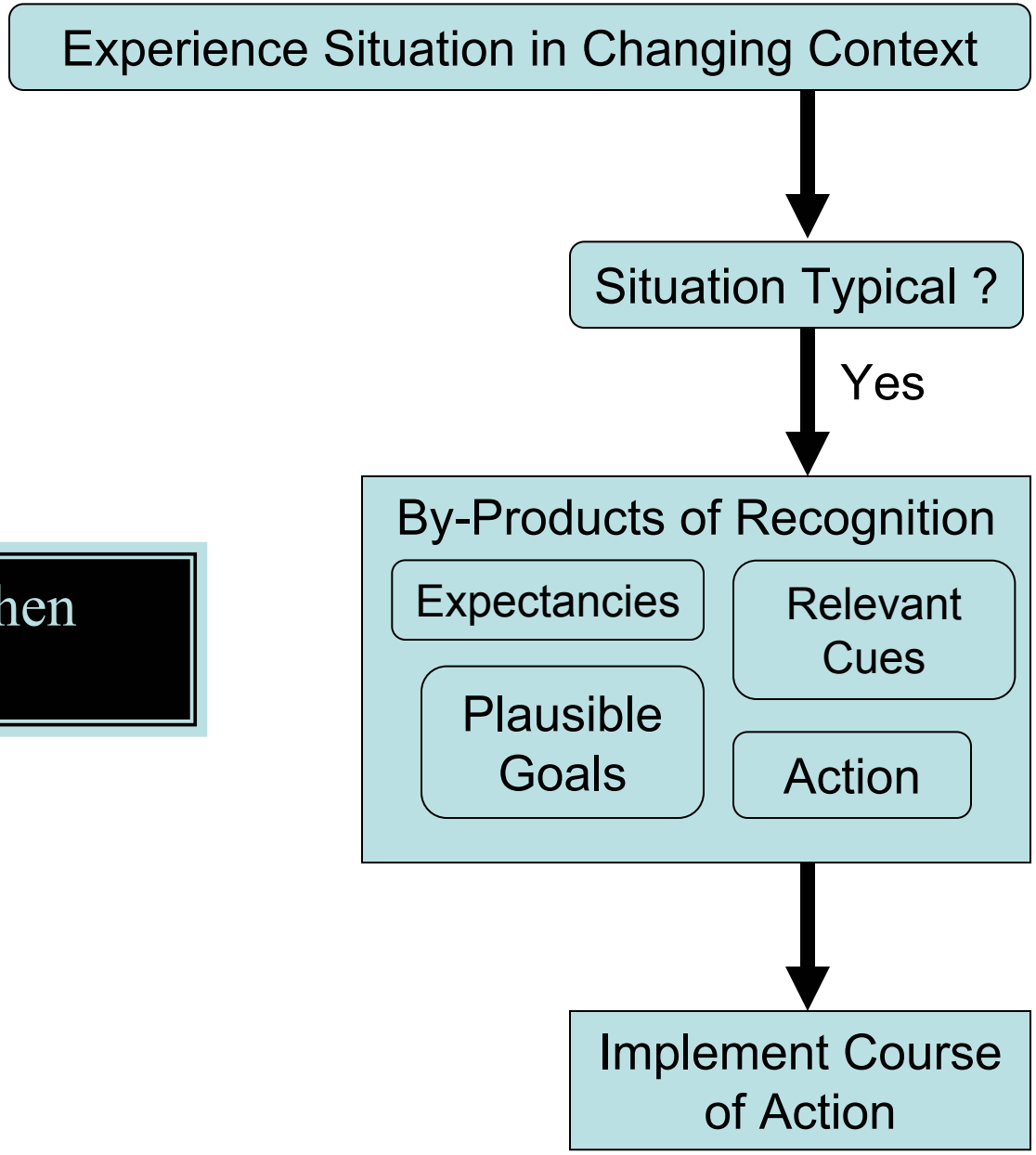


Inadequate Information

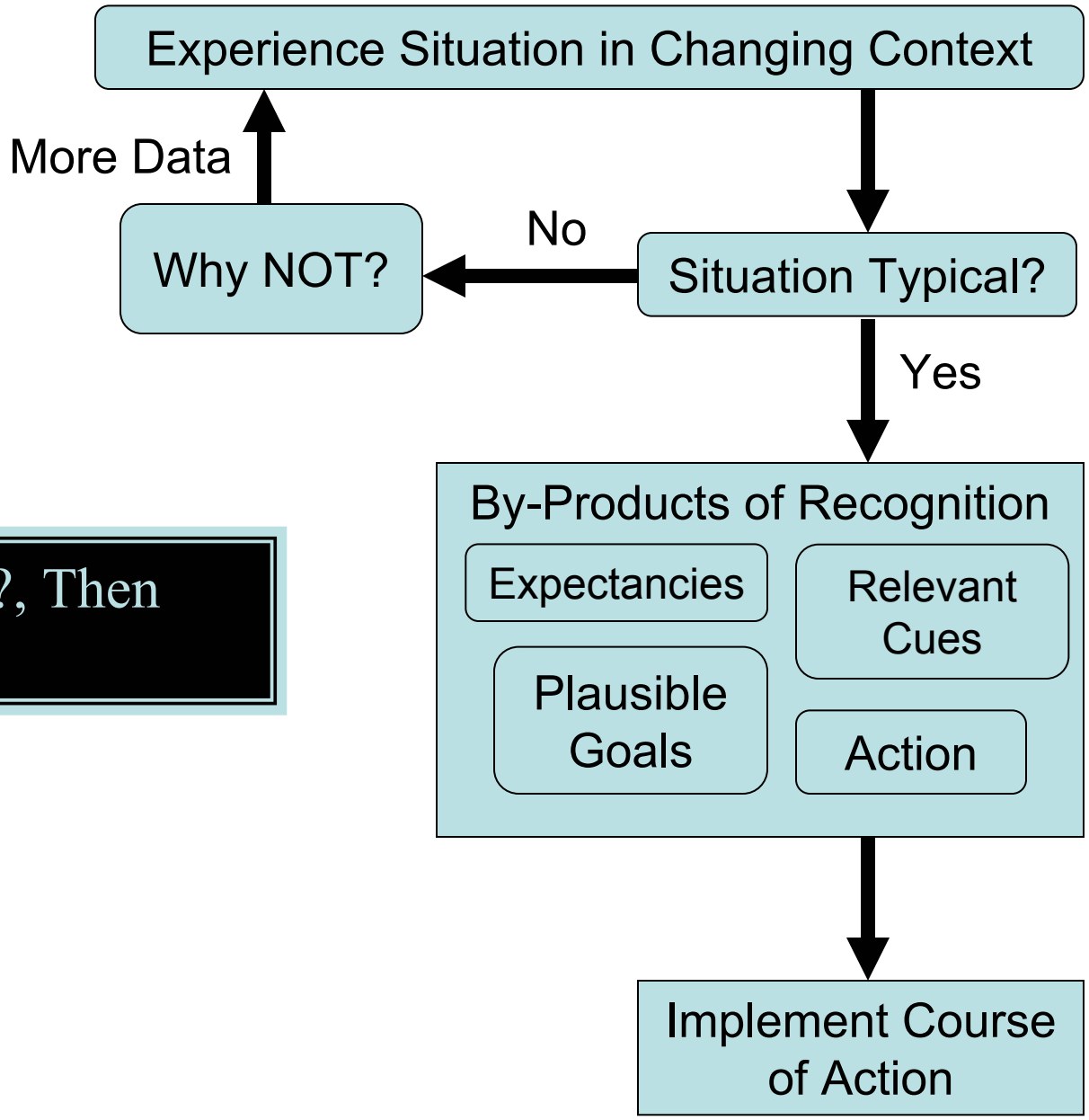



Dynamic
Conditions

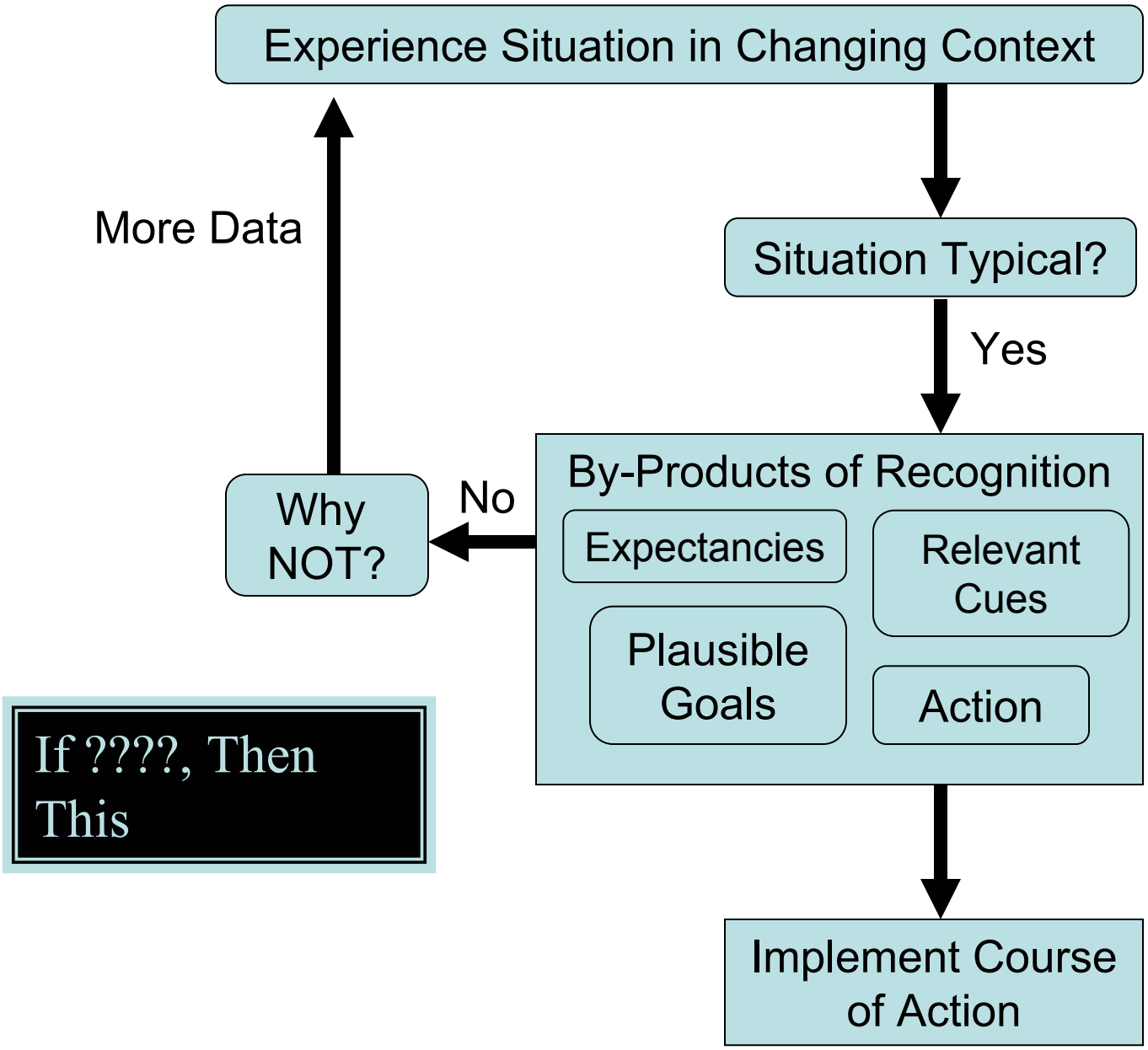
Recognition-Primed Decision Making

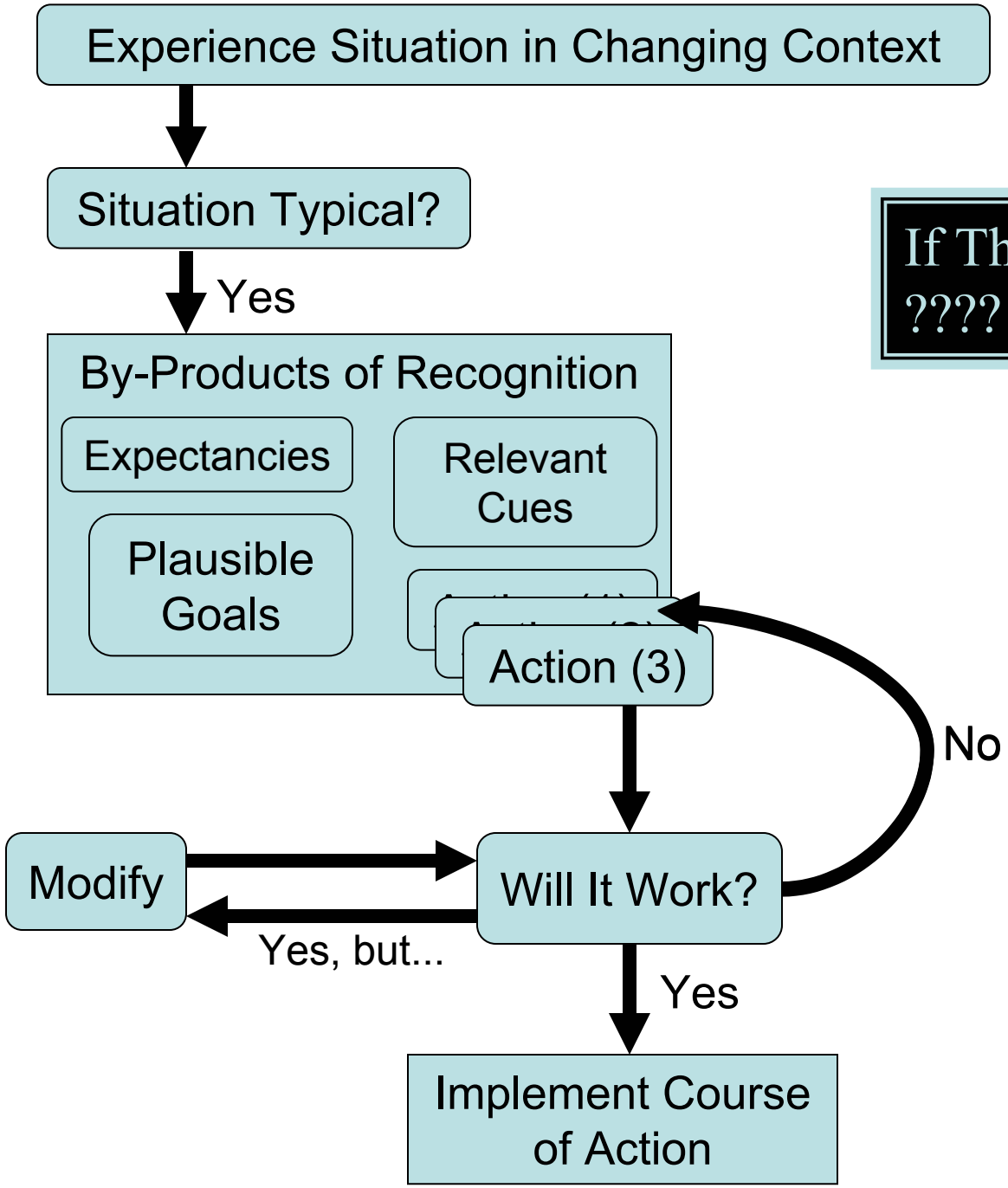


If This, Then This


Experience Situation in Changing Context
More Data
Why NOT?
No
Situation Typical?
Yes
By-Products of Recognition
Expectancies
Relevant Cues
Plausible Goals
Action
Implement Course of Action

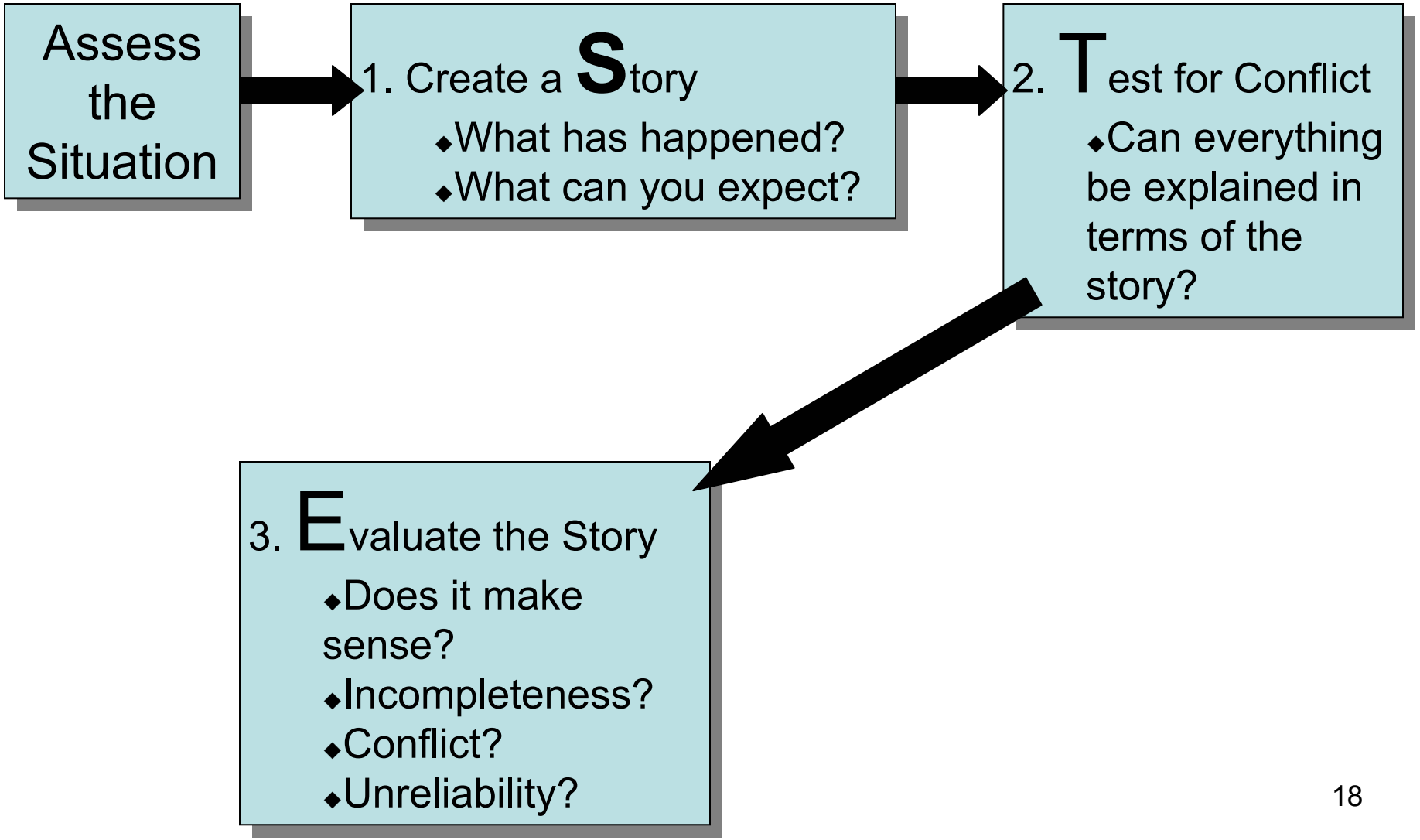
If ????, Then This


Experience Situation in Changing Context
Situation Typical?
Yes
By-Products of Recognition
Expectancies
Relevant Cues
Plausible Goals
Action
No
Why NOT?
More Data
Implement Course of Action
If ????, Then This


Experience Situation in Changing Context
Situation Typical?
Yes
By-Products of Recognition
Expectancies
Relevant Cues
Plausible Goals
Action (3)
No
Modify
Will It Work?
Yes, but...
Yes
Implement Course of Action

If This, Then ????

The STEP Process



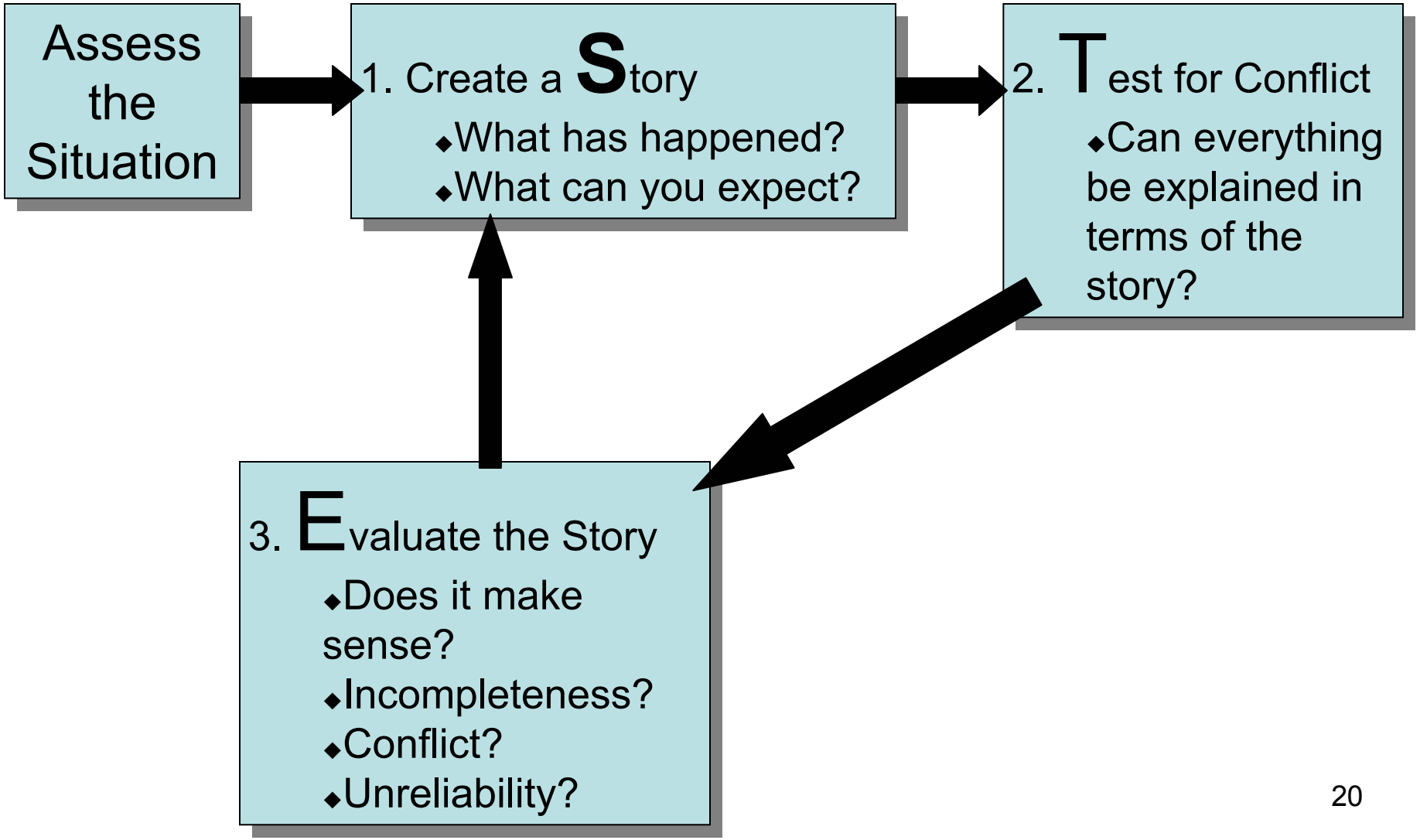
The Quick Test

- Is the cost of delay acceptable?
  - Is the cost of error high?
- Is the situation unfamiliar or problematic?

If yes,

reassess!

The STEP Process



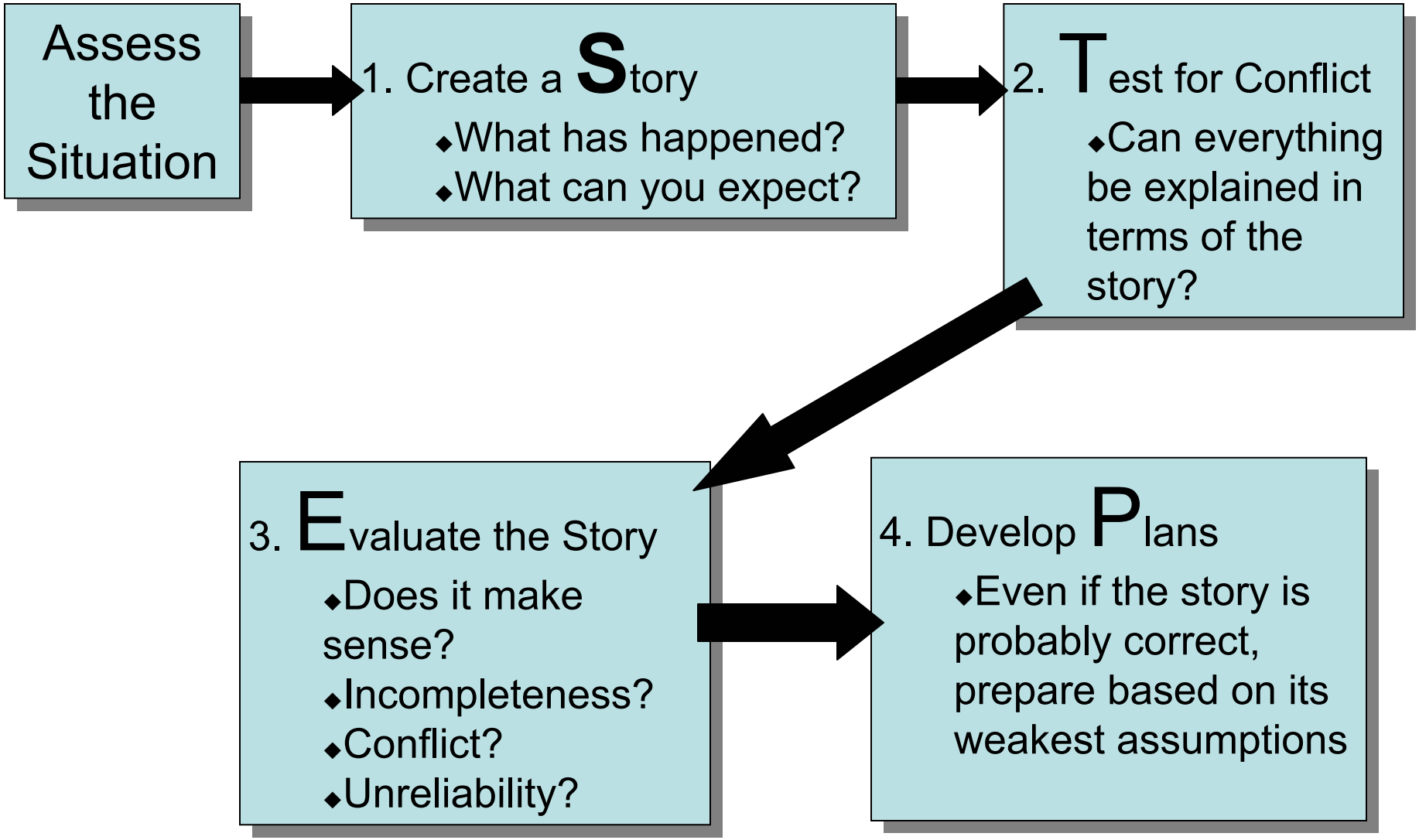
The Quick Test

- Is the cost of delay acceptable?
  - Is the cost of error high?
- Is the situation unfamiliar or problematic?

If yes, reassess!

If no, then GO!

The STEP Process



Case Studies

Case One

- **At 1100hrs, you are dispatched to an "unconscious person" in the parking lot of a supermarket.**
- **The patient is a 76 year old male who is sitting on the pavement with his back against the car. The store manager is with him. The patient is pale and appears to be sleeping. The patient's chest is moving.**
- **When you touch the patient, he seems to wake up. He is verbally responsive, but confused.**
- **His airway is open and clear. Respirations are 24, shallow, regular. The patient talks in complete sentences. Wheezes are present in the poster right lower lung field.**
- **The patient's skin Is pale, cool, and dry. Radial pulses 150, regular, rapid. BP is 90/62 in a sitting position. ☆**

Case One

- The store manager tells you the patient was walking to his car when he suddenly slumped to the ground. The employee who was helping him carry his purchases eased him to the pavement with his back against the car.
- The patient has had a “cold” for the last week, but has not seen a physician. He has been taking Robitussin for his cough.
- He has a history of chronic essential hypertension for which he takes Vasotec (enalapril). ☆

Case One

- Vital signs currently are:
  - P-150, weak, regular
  - R-24, shallow, regular
  - BP-90/62
- The ECG shows sinus tachycardia at 150
- Pulse oximetry is 90%
- Blood glucose level is 110 mg/dl
- The patient's skin has poor turgor and "tents."

Case Two

- **At 2130hrs, you are dispatched to a "sick child, nature unknown."**
- **You find an 8-month old male in his crib. He is awake, but has an intermittent, weak cry. He appears pale, but his mother says that is his normal color.**
- **Mother's chief complaint is that the child "isn't acting right."**
- **The child opens his eyes to mom's voice and cries weakly but does not move any of his extremities.**
- **Respirations are rapid. There is minimal chest wall movement. Most respiratory effort appears to be coming from the abdomen.**
- **Skin is warm and dry. Brachial pulse is 100, regular. ☆**

Case Two

- Mom says the child was acting normally earlier today. At dinner time he fell when he tried to climb out of his highchair, but ate his dinner as usual, took his bottle, and went to bed at 8:00pm. At about 11:00pm she noticed his cry and behavior weren't normal and called her pediatrician, who recommended she call EMS.
- The child has otitis media that was diagnosed 2 days ago.
- He is on Amoxil (amoxicillin).
- Since the antibiotic was started, he has been afebrile with normal activity. ☆

Case Two

- The child opens his eyes to voice and focuses on the speaker.
- He has an intermittent weak cry.
- His extremities are limp and do not respond to painful stimuli.
- There are no rashes, bruises, or other marks noted.
- Tympanic temperature is 98^{o}F.

Case Three

- **At 17:45hrs, you are dispatched to a report of an "unconscious woman."**
- **The patient is a 72-year old female who is lying on her right side on her kitchen floor. She is very pale and appears to be sleeping. There is bread dough rising on the counter. The oven door is open, and it is extremely hot in the room.**
- **There is a cut on her ankle with dried blood and no active bleeding.**
- **The patient's son is present. He had talked to her earlier in the day. Because she had told him that her air-conditioner was not working, he stopped by after work to check on her. He found her lying on the floor with the oven on. He turned off the oven and called EMS.** ☆

Case Three

- The patient is unresponsive to voice. She flexes her extremities in response to painful stimuli.
- The airway is open and clear.
- Respirations are 36, shallow, regular. Rales, wheezes, and rhonchi are present in the upper and lower left lung fields. Breath sounds are absent on the right side of the chest.
- The patient's skin is pale with a gray color, hot, and dry.
- There are no radial pulses, and a weak, rapid carotid pulse.☆

Case Three

- **Vital signs**
  - **P-160-170, weak, irregularly irregular**
  - **R-36, shallow, regular**
  - **BP-unobtainable**
  - **T-106^{o}**
- **Pitting edema is present to mid-shin bilaterally. Nail beds are cyanotic with mottled skin on the extremities. Abdomen is distended and soft with no masses.There is a 4cm laceration to the right ankle with dried blood. There is no immediate evidence as to how it happened. Pupils are constricted and nonreactive.** ☆

Case Three

- **The patient's son tells you she has been a Type II diabetic for 5 years. She also had an acute myocardial infarction about 3 years ago.**
- **She takes Digoxin (digitalis), Lasix (furomeside), a potassium supplement, and Glucotrol (glipizide).**
- **She has had problems with swollen feet since the beginning of summer, but has refused to see her physician.**
- **The patient's blood glucose is 34 mg/dl.**

Case Four

- At 0230 hrs, you are dispatched to “assist the police on an aggravated assault--stabbing to the abdomen.”
- The patient is a 46-year old male lying against a brick wall behind a shelter for the homeless. There are blood streaks and feces smeared over the front of his torn shirt.
- A strong odor of alcohol is present.
- The patient is alert, and is yelling and cursing at the police.
- His chief complaint is, “I can’t get up, m----- f-----!” ☆

Case Four

- The patient is awake. His speech is slurred, and he is confused. But he is able to obey commands.
- His airway is open and clear.
- Respirations are 18 and unlabored. Lung sounds are present, clear, and equal bilaterally.
- The patient's skin is warm and diaphoretic. Color appears normal.
- Radial pulses are present at 108.
- BP is 136/72.☆

Case Four

- **The police tell you the patient entered into an argument with another person in the shelter. Both were told to go outside, where the other party pulled a knife. They think the patient was stabbed in the abdomen.**
- **The patient refuses to tell you about previous illnesses, current health status, allergies, or medications.**
- **He has a bruise with an abrasion over his right eye. There are old track marks on both arms. The abdomen has old surgical scars, which the patient states were for a gunshot wound, and is soft and diffusely tender. There is a small open with pink tissue oozing blood and feces at mid-abdomen, just to the left of the umbilicus.**
- **There are abrasions on the left knee and shin. The patient moves all extremities.**
- **Blood sugar is 90mg/dl. The police tell you the patient blew a 0.35 on the breathalyzer.**

Case Five

- **At 1830hrs you are dispatched to a “diabetic with a syncopal episode.”**
- **The patient is a 64-year old female who lying supine on the living room floor. Her husband is with her.**
- **She is awake and alert, and is able to obey commands.**
- **Her airway is open and clear.**
- **Respirations are 18 shallow, and regular. She is able to talk in complete sentences, but seems to be out of breath. Breath sounds are present and equal bilaterally without adventitious sounds.**
- **The patient’s skin is pale, cool, and dry.**
- **Radial pulses are 74, weak, and slightly irregular.**
- **The patient’s complaint is that she feels light-headed when she stands up.** ☆

Case Five

- The patient has a history of insulin-dependent diabetes mellitus, hypertension, and chronic renal failure for which she has been on dialysis for 2 years.
- She takes regular and ultra lente insulin, timolol, erythropoietin, ferrous sulfate, and a vitamin/mineral supplement.
- She had dialysis this morning which went normally. She felt well for the rest of the day, but this evening when she stood up from the couch, she felt “light-headed” and “almost blacked out.” ☆

Case Five

- **Vital signs are:**
  - **P-74 weak, regular**
  - **R-18 shallow, regular**
  - **BP-100/56**
- **The patient's mucous membranes are pale. A dialysis fistula site with a palpable thrill is present in the left forearm. The patient's abdomen is soft and non-tender. She denies abdominal pain, vomiting, or changes in her stool.**
- **Blood sugar is 112 mg/dl**
- **When the patient is moved to a sitting position, her radial pulses disappear and she loses consciousness.**
- **When she is placed supine with her legs elevated consciousness returns**.